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10/598,647	09/07/2006	Javier del Prado Pavon	US040143	8490

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EXAMINER	
WANG-HURST, KATHY W	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/598,647	DEL PRADO PAVON ET AL.	
	Examiner	Art Unit	
	KATHY WANG-HURST	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-33,35-38,40,41,43 and 45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-33,35-38,40,41,43 and 45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 July 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1. Applicant's amendment filed on 7/29/2008 has been entered. Claims 5, 34, 39, 42 and 44 have been cancelled without prejudice. Claims 1, 28, 36 and 41 have been amended to incorporate the features from the cancelled claims 5, 34, 39, 42 and 44 respectively. Claims 1-4, 6-33, 45-38, 40-41, and 45 are still pending in this application.

Specification

2. The specification is objected to because definitions of technical terms such as EDCA, DNT and DRP are incorporated by applicant in the following references which are not available to examiner. Examiner respectfully requested in the non-final office action dated 4/29/2008, but did not receive any of the references from amendment received on7/29/2008. The references are as follows:

a) "MBOA Wireless Medium Access Control (MAC) Specification for High Rate Wireless Personal Area Network (WPANs), Technical Specification, Draft 0.5, April 2004."

b) "WUSB Key Developers, USB-IF, WUSB Micro-scheduling specification, Revision 0.5c, December 2003."

Claim Objections

3. Claims 4, 7, 8, 10, 12, 21, 24, 33, 38, 41 and 43 are objected to because the meaning of EDCA is not adequately defined. For examination purposes, EDCA is interpreted as data distribution with priority.

Response to Arguments

4. Applicant's arguments filed 7/29/2008 have been fully considered but they are not persuasive. Applicant's amendment necessitated the new grounds of rejection in this office action.

The applicants argued features wherein a method and a host apparatus for host-device communication in a wireless USB network wherein a host sending beacons including the capabilities of the host and those of at least one connected device to the connected devices using UWB MAC protocol, receiving replies from connected devices and operating the network based on the capabilities in the beacons, read upon Peters in view of Salokannel as follows.

Peters discusses operations of wireless USB network in which there is a host and a plurality of devices connected to the host wirelessly. Thus Peters shows the limitation of "a method for host-device communication in a first Wireless Universal Serial Bus network including a host and at least one connected device." Peters discusses the host sending queries to the multiple devices using protocols including but not limited to UWB, Wireless Firewire, Wi-Fi, WPAN, Bluetooth and wireless implementation of RS-232 protocol, and the wireless module comprises device interface, MAC and PHY. Thus Peters shows the limitation of "beaconing according to a distributed UWB MAC protocol by the host and the at least one connected device". Peters discusses host receiving responses from the devices to establish attachment and considering devices detached if

the host does not receive any response. Thus Peters shows the limitation of “receiving by the host DNT”. Peters discusses host interacting with connected devices some of which may have limited capabilities such as having a processor available to perform complex communication tasks. Thus Peters shows limitation of "operating the WUSB network by the host according to the capabilities of the connected devices". Peters discusses some devices have limited capabilities and cannot perform complex communication tasks. Peters in view of Salokannel discusses beaconing during beaconing period to convey the capabilities of the host and a capability field identifying various capability attributes or characteristics of a device. Peters in view of Salokannel also discuesses a PNC capable field identifying whether the device is capable of being a coordinator. Thus Peter in view of Salokannel shows limitation of “the beaconing comprising including capabilities of the host in a host beacon; and including capabilities of the at lease one connected device in a connected device beacon.”

Therefore, the argued limitations read upon the cited references or are written broad such that they read upon the cited references, as follows.

Claim Rejections - 35 USC § 103

5. Claims 1, 4, 6, 8, 10, 12, 14-15, 20, 35, 40, 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Peters et al. (US 2003/0086388), herein referred as Peters, in view of Salokannel et al (US 2005/0075084).

Regarding claim 1, Peters discloses a method for host-device communication in a first WUSB network (Abstract and Fig. 1B) including a host (Fig. 1B, 10) and at least one

connected device (Fig. 2, 25), comprising the steps of:

beaconing according to a distributed UWB MAC protocol by the host and the at least one connected device; ([0054], host beaconing device for connection; and [0036] showing the use of MAC for authentication)

receiving by the host DNT traffic ([0054], host receiving the response from the device);

Peters discloses that some wireless devices have limited capabilities such that they may not be able to perform complex communication tasks ([0026]). Peter fails to disclose explicitly the beaconing comprising including capabilities of the host in a host beacon; and including capabilities of the at least one connected device in a connected device beacon.

Salokannel teaches a wireless network with a host and remote devices in which host beacons during the beacon period to convey capability information such as transmit power level constraints and the allocation of time slots to devices in the network ([0071]). There is a capability field identifying various capability attributes or characteristics of a device ([0072]). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Peters, and indicate the host and device capabilities in the beaconing messages, as taught by Salokannel, thus increasing the flexibility of the wireless network by allowing different devices to assume the network host role at various times if the capability of the device is known ([0008]).

Regarding claim 4, applicant of this application uses alternative language “one of the steps”. Examiner will only meet one of the limitations to read on the claim. Peters discloses the method of claim 1, further comprising the at least one connected device performing the steps of:

signaling in the beacons to send notification traffic ([0005] [0065]).

Regarding claim 6. Peters discloses the method of claim 1, further comprising the step of the at least one connected device discovering the host via the host beacon (Abstract and [0023]).

Regarding claim 8, the limitations in this claim are rejected based on the same reasons given to reject claim 4.

Regarding claim 10, the limitations in this claim are rejected based on the same reasons given to reject claim 4.

Regarding claim 12, the limitations in this claim are rejected based on the same reasons given to reject claim 4.

Regarding claim 14, Peters discloses the method of devices attaching and detaching to host in a WUSB network but fails to disclose the method comprising the step of the at least one connected device acting as a host in second WUSB network. Salokannel

teaches a method whereby the device can assume the host role if the device has the power capability of doing so ([0008]). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the method taught by Salokannel into the method disclosed by Peters to enhance the flexibility and scalability of the network.

Regarding claim 15, Peters discloses the method of claim 14, wherein the host device may be further comprised of host and a wireless module in a WUSB network but fails to disclose at least one connected device acting as a host of the second network performs at least some of the steps performed by the host of the first network. Salokannel teaches a method wherein the host device can handover its role of being a host to a device if the device is the power resource ([0008]). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the method taught in IEEE into the method disclosed by Peters in order to expand the functionality and flexibility of the wireless network.

Regarding claim 20, Peters discloses a host apparatus for host-device communication in a first WUSB network including the host and at least one connected device, comprising:
a transmitter (in a wireless network a transmitter must exist to transmit signals) for sending beacons, traffic notifications, medium reservations and
data;

a receiver (for a wireless network it is implied that a receiver must exist to receive signals) for receiving beacons, traffic notifications, medium reservations and data;

a host data transfer processing component (for a wireless network it is implied that a data processing component must exist to process signals) that processes data transferred between the host and the at least one connected device; and

a controller (for a wireless network it is implied that a controller must exist to coordinate the functions) operably coupled to the transmitter, receiver and host data transfer processing component and configured to direct the transmitter, receiver and host data transfer processing component to

start beaconing according to a distributed UWB MAC protocol ([0054], host beaconing device for connection; and [0036] showing the use of MAC for authentication; Abstract showing host capabilities)

receive and process according to a distributed UWB MAC protocol ([0024],[0029]), beacons of the at least one connected device (Abstract beaconing, responding and processing; [0036] showing use of MAC),

receive and process DNT traffic ([0054], host receiving and processing the response from the device), and

start and control WUSB operation of the network ([0034] network is operated through particular wireless communication protocol).

Peter fails to disclose explicitly the beaconing the capabilities of the host in a host beacon, and capabilities of the at least one connected device in a connected device beacon.

Salokannel teaches a wireless network with a host and remote devices in which host beacons during the beacon period to convey capability information such as transmit power level constraints and the allocation of time slots to devices in the network ([0071]). There is a capability field identifying various capability attributes or characteristics of a device ([0072]). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Peters, and indicate the host and device capabilities in the beaconing messages, as taught by Salokannel, thus increasing the flexibility of the wireless network by allowing different devices to assume the network host role at various times if the capability of the device is known ([0008]).

Regarding claim 35, the limitations in this claim are rejected based on the same reasons given to reject claim 6.

Regarding claim 40, the limitations in this claim are rejected based on the same reasons given to reject claim 6.

Regarding claim 45, the limitations in this claim are rejected based on the same reasons given to reject claim 6.

6. Claims 2-3, 7, 9, 11, 13, 16-19, 21-33, 36-38, 41, 43 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters in view of Salokannel, further in view of IEEE Std 802.15.3-2003, herein referred to as IEEE.

Regarding claim 2, Peters discloses the method of claim 1, further comprising the step of requesting the status of the port, but fails to disclose the method comprising, if distributed reservation is supported, setting an offset field and a duration field in a DRP reservation. Salokannel discloses a channel time allocation period but fails to disclose an offset field and a duration field. IEEE teaches a method comprising reservation request (section 8.4.3) having a start time and a duration that is a multiple of a predetermined value (section 7.5.6.1, multiple of TUs, time units).
Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the method taught in IEEE into the method disclosed by Peters and Salokannel in order to improve the data traffic flow by reserving time slots to the connected devices.

Regarding claim 3, Peters and Salokannel disclose the method of claim 2, but fails to disclose the method wherein the predetermined value is 625usec. IEEE teaches the predetermined value (section 7.5.6.1, time unit is user specific and can be any value in the range of [0, 655535]μsec and 625μsec is within this range). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was

made to incorporate the method taught by IEEE into the method disclosed by Peters in order to improve data traffic flow by setting specific time slots for the connected devices to communicate with the host to avoid collisions.

Regarding claim 7, Peters discloses the method of claim 1, wherein the operating step further comprises the step of *if* the connected device supports EDCA, the host performing the steps of:

accessing the medium ([0033]);

polling ([0035]) the at least one connected device to request that the at least one connected device transmit data; and

receiving data from the at least one connected device as a result of the poll. ([0040])

However Peter and Salokannel fail to explicitly disclose the method using an EDCA mechanism to access the medium. IEEE (Section 8.4.3.1 channel time allocation with priority and A1.2.1 QoS support) teaches a resource reservation control mechanism with different priority to different application or data flows. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the method taught in IEEE into method disclosed by Peters and Salokannel in order to enhance the quality and efficiency of the data transmission process.

Regarding claim 9, Peters and Salokannel disclose the method of broadcast polling messages but fails to disclose the method further comprises the step of if the connected device supports Unicast DRP, performing a Unicast reservation by the host. IEEE

teaches a method of performing unicast reservation (section 8.5) by the host performing the steps of:

initiating a Unicast DRP reservation to the at least one device to reserve channel resources for transmission of data to the host by the at least one device; (section 8.5 channel reservation which includes 8.5.1 for isochronous streams and 8.5.2.1 for asynchronous streams)

polling the at least one connected device during DRP to request that the at least one connected device transmit data; (Section C.2.1 b, polling during reservation) and receiving data from the at least one connected device at a result of the poll (Section 8.8.2 and 8.8.3 acknowledging receipt of data). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the additional features taught in IEEE into the method disclosed by Peters and Salokannel in order to improve the data traffic flow of the wireless network by performing unicast reservation.

Regarding claim 11, Peters and Salokannel disclose the method of claim 1 but fails to disclose the method, wherein the operating step further comprises *the* step of if the connected device supports Multicast DRP, performing a Multicast reservation by the host . IEEE (section 8.5.2) teaches the method of multicast reservation performing the steps of:

reserving channel resources in a first DRP reservation by inclusion of multicast DRP in beacons to achieve a first reservation (sections 8.5.2.1 and 8.5.2.2);

for each connected device that is a non-accepting device that does not accept the Multicast DRP reservation, initiating regular DRP negotiation with each non-accepting device to achieve at least one of a Unicast reservation for each non-accepting and a second DRP reservation (Section 8.4.3.2 channel time allocation, paragraph 4, if not receiving multicast traffic);

micro-scheduling the channel resources of the first and second DRP reservation among those connected devices of the at least one connected device that accept the multicast DRP reservation (section 8.4.3 allocating resources); and

receiving data from the at least one connected device (section 8.8.2 and 8.8.3 acknowledging receipt of data). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the additional features taught in IEEE into the method disclosed by Peters and Salokannel in order to improve the data traffic flow of the wireless network by performing multicast reservation.

Regarding claim 13, the combination of Peters, Salokannel and IEEE discloses performing initiating a Unicast DRP reservation with a non-accepting device and initiating a second Multicast DRP reservation with non-accepting devices.

Regarding claim 16, the limitations in this claim are rejected based on the same reasons given to reject claim 2.

Regarding claim 17, the limitations in this claim are rejected based on the same reasons given to reject claim 3.

Regarding claim 18, the limitations in this claim are rejected based on the same reasons given to reject claim 2.

Regarding claim 19, the limitations in this claim are rejected based on the same reasons given to reject claim 3.

Regarding claim 21, Peters and Salokannel disclose the host apparatus of claim 20, wherein the controller is further configured to direct the transmitter, receiver and host data transfer processing component but fail to include the technical details of multicast, unicast reservation mechanisms. IEEE teaches the host apparatus wherein the controller is configured to:

include multicast DRP in beacons (section 8.5.2) and then start micro-scheduling operation of multicast DRP is supported;

receive and process DNT traffic ([0054], host receiving and processing the response from the device) and if only unicast DRP(section 8.5.2) is supported by the connected device negotiate unicast DRP with the at least one connected device and then start WUSB operation; and

receive and process DNT traffic and if only EDCA is supporeted by the connected device start WUSB operations with poll frame using EDCA (Section 8.4.3.1 channel time allocation with priority and A1.2.1 QoS support).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the features that taught in IEEE into the apparatus disclosed by Peters and Salokannel in order to expand the capabilities of the wireless network.

Regarding claim 22, Peters and Salokannel disclose the host of apparatus of claim 20, wherein the controller is further configured to direct the device data transfer processing component but fail the disclose to set an offset field and a duration field in each DRP reservation to a multiple of predetermined value. IEEE teaches a reservation request mechanism having a start time and a duration that is a multiple of a predetermined value (section 7.5.6.1, multiple of TUs, time units).
Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the method taught in IEEE into the method disclosed by Peters in order to improve the data traffic flow of the wireless network by setting specific time slots.

Regarding claim 23, the limitations in this claim are rejected based on the same reasons given to reject claim 3.

Regarding claim 24, the limitations in this claim are rejected based on the same reasons given to reject claim 7.

Regarding claim 25, the limitations in this claim are rejected based on the same reasons given to reject claim 9.

Regarding claim 26, the limitations in this claim are rejected based on the same reasons given to reject claim 21.

Regarding claim 27, the limitations in this claim are rejected based on the same reasons given to reject claim 21.

Regarding claim 28, the limitations in this claim are rejected based on the same reasons given to reject claim 1.

Regarding claim 29, the limitations in this claim are rejected based on the same reasons given to reject claim 11.

Regarding claim 30, the limitations in this claim are rejected based on the same reasons given to reject claim 11.

Regarding claim 31, the limitations in this claim are rejected based on the same reasons given to reject claim 2.

Regarding claim 32, the limitations in this claim are rejected based on the same reasons given to reject claim 3.

Regarding claim 33, the limitations in this claim are rejected based on the same reasons given to reject claim 4.

Regarding claim 36, Peters and Salokannel disclose a method for host-device communication in a WUSB netwrok including a host and at least one connected device, comprising the steps of:

beaconing according to a distributed UWB MAC protocol by the host and the at least one connected device;

Peter and Salokannel do not disclose establishing unicast reservations. IEEE teaches establishing unicast reservation between the host and the at least one connected device (section 8.5.2 host and device reservation); and

running a WUSB protocol inside the unicast reservations(section 8.5.2).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the features taught in IEEE to the method disclosed by Peters in order to improve the data traffic flow of the wireless network through reservations.

Regarding claim 37, the limitations in this claim are rejected based on the same reasons given to reject claim 9.

Regarding claim 38, the limitations in this claim are rejected based on the same reasons given to reject claim 8.

Regarding claim 41, Peters and Salokannel disclose a method for host-device communication in a WUSB network including a host and at least one connected device, comprising the steps of:

the host using an EDCA mechanism to access the medium;

the host polling the at least one connected device to request that the at least one connected device transmit data; and

the host receiving data from the at least one connected device as a result of the poll.

Peters and Salokannel fail to disclose host using an EDCA mechanism to access medium. IEEE teaches host using an EDCA mechanism to access medium (Section 8.4.3.1 channel time allocation with priority and A1.2.1 QoS support). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the mechanism taught in IEEE to the method disclosed by Peter in order to introduce priority in the data transmission process to improve the quality and efficiency of the wireless network.

Regarding claim 43, the limitations in this claim are rejected based on the same reasons given to reject claim 4.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

/NICK CORSARO/

Supervisory Patent Examiner, Art Unit 2617